

IN THE CLAIMS:

Amendments to the Claims

Please cancel claim 1 without prejudice or disclaimer of the subject matter thereof, and add the new claims as shown below.

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

2. (new) An optical amplifier which amplifies a multiplexed signal light which is multiplexed with a plurality of signals having different wavelengths, comprising:

an optical amplifying medium which amplifies the multiplexed signal light and outputs amplified multiplexed signal light;

a first light separator which separates a light having a specific wavelength from at least a part of the amplified multiplexed signal output from said optical amplifying medium inputted thereto;

a first light receiver which inputs the light having the specific wavelength separated by said first light separator and measures a strength of the specific wavelength light; and

a controller which controls an output of said optical amplifying medium such that the strength of the specific wavelength light becomes a first predetermined value.

3. (new) An optical amplifier according to claim 2, wherein said optical amplifying medium is an optical fiber amplifier, said optical amplifier further

comprises an exciting light source which outputs an exciting light to be input to the optical amplifying medium to excite the optical amplifying medium, and said controller controls the output of said optical amplifying medium by controlling a strength of the exciting light input to said optical amplifying medium.

4. (new) An optical amplifier according to claim 2, further comprising:
a first light brancher which is input with at least a part of said amplified multiplexed signal light output from said optical amplifying medium, branches a part of said amplified multiplexed signal light and outputs the branched light; and

a second light receiver which is input with the amplitude multiplexed signal light output from said first light brancher and checks the strength of the branched amplified multiplexed signal light;

wherein said controller performs one of (a) controlling an output of said optical amplifying medium such that the strength of the specific wavelength light measured by said first light receiver becomes the first predetermined value, and (b) controlling an output of said optical amplifying medium such that the strength of the branched amplified multiplexed light measured by said second light receiver becomes a second predetermined value.

5. (new) An optical amplifier according to claim 4, further comprising:
a second light brancher which is input with at least a part of said multiplexed signal light input to said optical amplifying medium, branches a part of said multiplexed signal light and outputs the branched multiplexed signal light; and

a third light receiver which is input with the multiplexed signal light output from said second light brancher and checks the strength of the branched multiplexed signal light;

a second light separator which separates light having the specific wavelength from a part of the multiplexed signal input to said optical amplifying medium;

a fourth light receiver which measures the strength of the light having the specific wavelength separated by the second light separator; and

an input detector for comparing the strength measured by said third light receiver with a third predetermined value and comparing the strength measured by said fourth light receiver with a fourth predetermined value in order to detect whether or not a status of said multiplexed signal light and a status of the light having the specific wavelength are normal.

6. (new) An optical amplifier according to claim 5, wherein said input detector notifies said controller of the status of said multiplexed signal light and the status of the light having the specific wavelength, and said controller is notified from said input detector, and (a) when both of the status of said multiplexed signal light and the status of the light having the specific wavelength are normal, controls an output of said optical amplifying medium such that the strength of the specific wavelength light measured by said first light receiver becomes the first predetermined value, and (b) when the status of said multiplexed light is normal and the status of the signal light having the specific wavelength is abnormal, controls an output of said optical amplifying medium such that the strength of the wavelength light measured by said second light receiver becomes the second predetermined value.